



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/631,251	08/02/2000	Donald L. Wurch	22171.201(10740RRUS02U)	8412

27683 7590 11/20/2003
HAYNES AND BOONE, LLP
901 MAIN STREET, SUITE 3100
DALLAS, TX 75202

EXAMINER

KLINGER, SCOTT M

ART UNIT	PAPER NUMBER
----------	--------------

2153

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/631,251

Applicant(s)

WURCH ET AL.

Examiner

Scott M. Klinger

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-26 are pending.

Priority

A claim for the benefit of U.S. Provisional Application 60/157,289 has been made. The effective filing date for the subject matter defined in the pending claims in the application is 1 October 1999.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10-15, 17-20, and 22-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Vepa et al. (U.S. Patent Number 6,490,632, hereinafter “Vepa”). Vepa discloses a system for load balancing and fail over support over multiple network interface cards.

In referring to claims 1 and 23, Vepa discloses,

- a) Determining an active network adapter (commonly referred to as a Network Interface Card or NIC) by monitoring packet traffic and hardware status of one or more network

Art Unit: 2153

adapters (column 13, 32-34, "The fault tolerance module dynamically adds and removes MAC addresses from the list depending on the status of each NIC", column 14, lines 22-28, "In step 820, the fault tolerance module in the present embodiment determines whether the incoming data packet is a 'keep-alive' data packet. Data packets are typically sent to determine whether the connection between a client computer system and the server computer system is still active. Also, data packets may also be sent to and from the various NICs as a means for determining whether a NIC is active.")

- b) Dynamically engaging the active network adapter by a Network Access Arbitrator (NAA) to process at least one data packet (Figure 4 - the Dynamic Access Software Element **330** and Load Balancing Scheme **335** act as a NAA for computer system **190**, Figure 3A - the active network adapter engaged to process packets that are sent to and from computer system **190**)
- c) The engagement of the active network adapter is invisible to the active network application (Figure 4 - the Application Layer **310** only communicates with the Network Layer **320**, the layers below the Network Layer **320** are invisible to Application Layer **310**)

In referring to claims 2, 12, and 24, Vepa discloses,

- d) The NAA defines a virtual anchor adapter driver that is known as the only adapter driver (Figure 4 - the Dynamic Access Software Element **330** and Load Balancing Scheme **335** act as a NAA for computer system **190**, from the figure it can be seen that the Network Layer **320** is connected to the Load Balancing Scheme **335** and cannot see the plurality of NIC drivers, **340a-340d**)

In referring to claims 3, 13, and 25, Vepa discloses,

- e) Assigning a predetermined network adapter as a primary network adapter (it is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, “executing a load balancing scheme to specify a first NIC from said plurality of NICs”)
- f) Initially setting the virtual anchor adaptor driver as the network adapter driver associated with the primary adapter

In referring to claims 4, 7, 19, and 26, Vepa discloses,

- g) Changing the hardware source address of outgoing data packets to that of the active network adapter (column 4, lines 12-14, “The media access control (MAC) address that represents the selected NIC is inserted in the outgoing data packet”)
- h) Changing the hardware destination address of incoming data packets to that of the primary network adapter (column 4, lines 48-51, “a filter that is adapted to mask a portion of a MAC address in an incoming data packet received at a NIC such that the MAC address the incoming data packet is equivalent to the MAC address representing the NIC ”)

In referring to claim 5, Vepa discloses,

- a, c, d, and e, described above

In referring to claims 6 and 18, Vepa discloses,

- f, described above

In referring to claims 8, 10, 15, and 20, Vepa discloses,

- i) Receiving information from a network adapter about connection or disconnection status (column 13, 32-34, “The fault tolerance module dynamically adds and removes MAC addresses from the list depending on the status of each NIC”)

In referring to claim 11, Vepa discloses,

- j) Utilizing the first network access technology for executing the active network application (it is inherent in a fault tolerance system to have first or primary NIC, to be used initially: claim 1 of Vepa, “executing a load balancing scheme to specify a first NIC from said plurality of NICs”)
- k) Selecting the second network access technology for continuing the active network application without interrupting the network application through a network access arbitrator by arbitrating between the first network adapter driver and the second network adapter driver for sending and receiving information (by definition a fault tolerance and fail over support scheme is designed to allow the switching from one network interface to another without interrupting the active network application: Vepa claim 2, “automatically switching from said first NIC to a second NIC when said fault tolerance scheme indicates said first NIC is not available”)

In referring to claim 14, Vepa discloses,

- Detecting when the second network adapter driver is active (**a**, described above)
- **g** and **h**, described above.

In referring to claim 17, Vepa discloses,

- **a, d, e, and k**, described above

In referring to claim 22, Vepa discloses,

- Detecting whether the primary network adapter is active (**a**, described above)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 16, and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Vepa in view of Latif et al. (U.S. Patent Number 6,393,483, hereinafter "Latif"). In referring to claims 8, 15, and 20, although Vepa shows substantial features of the claimed invention, Vepa does not show the step of providing a timer to trigger a timed event, and determining whether at least one adapter receives or sends packets during two consecutive timed events, to determine if the adapter is active. Nonetheless this feature is well known in the art and would have been an obvious addition to the system disclosed by Vepa as evidenced by Latif.

In analogous art, Latif discloses a method and apparatus for network interface card load balancing and port aggregation. Latif shows:

- Determining if a port on a NIC is active using timed events (column 15, lines 31-39, "When the link check timer routine is performed again after the predetermined timeout,

Art Unit: 2153

the smart NIC driver 126 will proceed to decision operation 1004 where it will be determined that the primary Rx port P1 is again active as shown in Table D below. As such, the primary Rx port will be once again designated as the receiver as described in operation 1014, after it is determined that the primary Rx port was not the receiver in operation 1010, and shown in Table C above")

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the fault tolerance scheme of Vepa so as to use timeouts, such as taught by Latif, in order to check if a NIC is active.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Scott M. Klinger
Examiner
Art Unit 2153

smk
22 October 2003


GLENN B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100